

# Demonstration of technical capabilities of the Bangle.js smartwatch

## What do we want you to demonstrate?

In this case, we would like to see a demonstration of the technical capabilities of the Bangle.js watch in supporting consumer behaviour research. At least one of the topics below should be addressed in your application:

- Demonstrate the recording and presentation of data captured by multiple sensors that can be read or received on the Bangle.js. Consider, for example, combining weather or temperature data with performance data such as data captured by a pedometer, GPS sensor or accelerometer and recording this data for analysis:
  - What is possible, what is not?
  - How can measured data be registered and stored? Because of the limited space on the watch, maybe data can be saved to the phone via BLE communication?
- Demonstrate that the watch can run a TensorFlow Lite model e.g. for recognizing gestures. You might for instance think of recognize having a meal by gesture recognition and then give a notification on the watch with a reminder to fill in e.g. FoodProfiler.
  - Is it possible to make a TensorFlow model to recognize a relevant gesture and run it on the watch?
  - What is possible, what is not?

## Some background information

- [Overview of technical specifications Bangle.js](#)
- [Bangle.js tutorials](#)
  - *Programming basics*: The next tutorials will introduce you to the basics of programming with the Bangle.js using the [Espruino web IDE](#). When you don't have a watch you can use the [Bangle.js online Emulator](#) however you won't get access to the sensors, Bluetooth, speaker, or vibration motor!
    - [Bangle.js: Getting Started](#)
    - [Bangle.js: Development](#)
    - [Bangle.js: First App](#)
  - *AI on the Bangle.js with tensorflow*: The next tutorials and reference information will introduce you to developing AI applications with [TensorFlow](#) on the Bangle.js:
    - [Gestures and IA demo on Bangle.js](#)
      - [Gesture test app in bangle.js apps](#)
    - [TensorFlow lite model for gesture recognition](#)
      - [GitHub Repo](#)
      - [In Google Colab](#)
    - [TensorFlow gesture recognition demo in browser capturing bangle.js movements](#)
  - *Bangle.js and BLE communication*:
    - [Example apps Bangle.js with BLE communication](#): Each app links to the GitHub directory where the app code can be found
    - [Bangle.js tutorials](#), e.g. [About Bluetooth LE](#)
- Some Android information
  - [TensorFlow gesture classification](#)
  - [The ultimate guide to Android Bluetooth Low Energy](#)